

**GUIDANCE FOR ASSESSING THE QUALITY OF NAVAJO
NATION SURFACE WATERS TO DETERMINE IMPAIRMENT**
(Integrated 305(b) Reporting and 303(d) Listing)



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1.0 INTRODUCTION/PURPOSE

The Navajo Nation encompasses 17,627,262 acres, an area approximately the size of West Virginia. The Navajo Nation is located in the Four Corners region and extends into the states of Arizona, New Mexico, and Utah. There are approximately 39,000 miles of streams and 17,057 acres of lakes/ponds on the Navajo Nation. Five major river basins drain the Navajo Nation: San Juan, Little Colorado River, Lower Colorado River-Lake Mead, Upper Colorado River-Dirty Devil, and Rio Grande-Elephant Butte. Navajo Nation jurisdictional surface waters are located in 29 watersheds in these five river basins. The 29 watersheds are watersheds that have been assigned an eight-digit Hydrologic Unit Code by the United States Geological Survey (USGS 1987).

The purpose of this document is to provide the guidance required to determine, based on assessments of Navajo Nation surface waters, if the surface waters are impaired. The federal Clean Water Act (CWA) Section 305(b) (USGPO 1988) requires a report to be prepared detailing surface water quality and analyses of which surface waters are supporting their designated uses. CWA Section 303(d) requires that surface waters not supporting their designated uses be listed as impaired. This document consists of two parts: 1) a surface water quality assessment guidance consistent with CWA Section 305(b) and; 2) a guidance for listing surface waters as impaired consistent with CWA Section 303(d). Using the assessment guidance and the impaired water body listing guidance will allow an “integrated report” to be prepared by the Navajo Nation Environmental Protection Agency’s Water Quality Program (NNEPA WQP).

2.0 CWA 305(b) ASSESSMENT GUIDANCE

Sampling and monitoring of Navajo Nation surface waters is conducted in order to compare the data gathered during these activities to benchmarks that are used to assess the overall water quality of the water body. The benchmarks that are used are the water

quality standards. Water quality standards may be chemical, biological, physical or toxicological. They may be numeric or narrative. For the purpose of this guidance, water quality standards that are defined in the latest version of Navajo Nation Surface Water Quality Standards (NNEPA 2007) are used as the benchmarks to assess surface water quality.

2.1 NAVAJO NATION SURFACE WATER QUALITY STANDARDS

On January 20, 2006 the US Environmental Protection Agency (USEPA) approved the Navajo Nation's application to administer the Water Quality Standards and Certification Programs under the federal Clean Water Act's Sections 303 and 401 (USEPA 2006). The approval was granted using the 1999 Navajo Nation Water Quality Standards (NNEPA 1999). In 2004 the standards were updated and are now known as the Navajo Nation Surface Water Quality Standards (NNSWQS) (NNEPA 2004). The latest version of the NNSWQS (NNEPA 2007) is currently in the triennial review period and is expected to be approved by USEPA in 2008.

Surface water quality standards are the fundamental benchmarks by which the quality of surface waters is measured (MPCA 2005). It is the surface water quality standards that are used to determine if a designated use for a given water body is being supported. They define the level of protection required to support the designated uses of Navajo Nation surface waters.

2.1.1 DESIGNATED USES FOR NAVAJO NATION SURFACE WATERS

There are seven possible designated uses for which Navajo Nation surface waters may be protected (NNSWQS, Section 205). The seven designated uses are:

- 1) Domestic Water Supply (Dom),
- 2) Fish Consumption (FC)

- 3) Primary Human Contact (PrHC),
- 4) Secondary Human Contact (ScHC),
- 5) Agricultural Water Supply (AgWS),
- 6) Aquatic and Wildlife Habitat (A&WHbt), and
- 7) Livestock Watering (LW).

At a minimum all Navajo Nation surface waters are protected for FC, ScHC, A&WHbt, and LW uses. A list of all major Navajo Nation surface waters and their designated uses may be found in Table 205.1 of the NNSWQS.

2.1.2 NUMERIC SURFACE WATER QUALITY STANDARDS

A numeric surface water quality standard is the allowed value of a chemical or physical property that will protect the designated uses of a given water body. Each designated use has its own set of numeric standards. The most stringent numeric standard applies when a water body has more than one designated use. For the protection of a water body for aquatic and wildlife habitat, two numeric standards are used. The *acute* aquatic and wildlife habitat numeric standard is defined as toxicity involving a stimulus severe enough to rapidly induce a response from an aquatic organism. The *chronic* aquatic and wildlife habitat numeric standard is defined as toxicity involving a stimulus that lingers or continues for a long period relative to the lifespan of the aquatic organism.

2.1.3 NARRATIVE SURFACE WATER QUALITY STANDARDS

Narrative surface water quality standards are statements that prohibit unacceptable conditions in or upon the water, such as floating solids, scums, oil sheens, foam, odors, toxic pollutants, algae, aquatic plants, or trash dumping. Narrative surface water quality standards are often called “free froms” because they help to keep surface waters free from very fundamental and basic forms of water pollution (MNPCA 2005). Narrative surface water quality standards apply to all waters of the Navajo Nation, regardless of whether or

not these waters have been assigned designated uses. Narrative standards may apply to one or more designated uses.

2.2 DETERMINATION OF DESIGNATED USE SUPPORT

During the assessment process, water quality data resulting from the sampling and monitoring of Navajo Nation surface waters is compared to the numeric and narrative water quality standards to determine if the designated uses for that water body are supported. As mentioned, numeric standards are specific to an individual designated use, while narrative standards may apply to one or more designated uses. If the water quality standard is *attained*, then the *designated use is supported* for that standard. If the water quality standard is *not attained*, then the *designated use is not supported* for that standard. See Table 1 for a summary of data required to determine designated use support (MNPCA 2005).

3.0 CWA 303(d) IMPAIRED SURFACE WATER BODY LISTING GUIDANCE

The determination of whether to list a surface water as *impaired* is contingent upon whether the designated uses for that water body are supported. The United States Environmental Protection Agency (USEPA 2005) recommends that a comprehensive description of designated use support be conducted for all surface water body segments within a tribe. Surface water body segments are assigned one of five-categories based on their designated use support status to determine if the surface water should be listed as *impaired*.

3.1 SEGMENTATION OF SURFACE WATERS

Fundamental to the comprehensive description of designated use support is the use of a consistent and rational segmentation and geo-referencing approach for all

surface water body segments. The USEPA recommends that tribes consider using the National Hydrography Dataset (NHD) to code and georeference their surface water segments. Segments may comprise part of an NHD reach, an individual NHD reach, or a collection of NHD reaches or parts of reaches. This applies only to flowing (lotic) surface waters and not to still (lentic) waters. As mentioned the major, well known, Navajo Nation surface waters are listed by name in NNSWQS Table 205.1. It is the intent of the The Navajo Nation Environmental Protection Agency (NNEPA) NPDES/Water Quality Program to segment flowing surface waters according to NHD or other defined protocols.

3.2 CATEGORIES OF DESIGNATED USE SUPPORT

Once a determination of designated use support is made for a given water surface body using Table 1, surface water body segments are assigned one of five-categories based on their designated use support status to determine if the surface water should be listed as *impaired*. (USEPA 2005). The five reporting categories are as follows:

- Category 1: All designated uses are supported;
- Category 2: Some designated uses are supported, but insufficient data to determine if the other designated uses are supported;
- Category 3: There is insufficient data to determine if any designated use is supported;
- Category 4: At least one designated use is not supported, but does not require development of a Total Maximum Daily Load (TMDL) because:
 - 4a: A TMDL has been approved by USEPA; or
 - 4b: Pollution control requirements are expected to result in the support of the designated use; or
 - 4c: The designated use is not supported because the water body is impaired, but the impairment is not caused by a pollutant.

(Pollutant is defined in NNSWQS Section 104). This can include flow alterations and/or naturally occurring elements.

Category 5: At least one designated use is not supported and:

5a: A TMDL is underway or scheduled; or

5b: A review of the designated use and/or water quality standards will be conducted to determine if appropriate for the surface water body; or

5c: Additional data is needed before a TMDL is scheduled.

Surface water reaches falling into Category 5 will be considered *impaired* and listed on the federal Clean Water Act Section 303(d) list. This list is subject to review and public comment before submittal to USEPA, which may result in the reassessment of a given surface water reach into one of the other categories.

4.0 REFERENCES

Minnesota Pollution Control Agency Environmental Outcomes Division. October 2005.

Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment. 305(b) Report and 303(d) List.

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Navajo Nation Environmental Protection Agency Water Quality Program. July 30, 2004. Navajo Nation Surface Water Quality Standards.

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United States Environmental Protection Agency Office of Water, Office of Wetland, Oceans and Watersheds, Assessment and Watershed Protection Division, Watershed Branch. July 29, 2005. Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act.

United States Geological Survey. 1987. Hydrologic Unit Maps, United States Geological Survey Water-Supply Paper 2294.

United States Government Printing Office. March 1988. The Clean Water Act As Amended By The Water Quality Act Of 1987 Public Law 100-4.

Table 1. Summary of Data Required to Determine Designated Use Support.

Water Quality Standard (WQS)	Designated Use(s)	Minimum Number of values	Number or Percent Exceedances of WQS	Designated Use Support Decision
Metals, Organics, Inorganics, and Radiologicals	Dom, FC, PrHC, ScHC, AgWS, A&WHbt (chronic), LW	5 values in 3 years	≤ 1	Supported
			≥ 2	Not Supported
Metals, Organics, and Inorganics	A&WHbt (acute)	5 values in 3 years	< 1	Supported
			≥ 1	Not Supported
Asbestos	Dom	5 values in 3 years	< 1	Supported
			≥ 1	Not Supported
Dissolved oxygen, pH, suspended sediments, temperature, turbidity	Dom, PrHC, ScHC, A&WHbt	10 values in 10 years	$< 15 \%$	Supported
			$\geq 15 \%$	Not Supported

Table 1 (continued). Summary of Data Required to Determine Designated Use Support.

Water Quality Standard (WQS)	Designated Use(s)	Minimum Number of values	Number or Percent Exceedances of WQS	Designated Use Support Decision
E-Coli	Dom, PrHC, ScHC	10 values in 10 years	< 15 % for single sample and < 1 for geometric mean	Supported
			≥ 15 % for single sample and/or ≥ 1 for geometric mean	Not Supported
Methylmercury in Fish Tissue	FC	Most recent data	< 0.3 milligrams methylmercury / kilogram fish	Supported
			≥ 0.3 milligrams methylmercury / kilogram fish	Not Supported
Narrative	One or more	Designated Use Support Decision made on a case-by-case basis.		
Biological Community Water Body Morphology Toxicity Testing	(RESERVED)	(RE-SERVED)	(RESERVED)	(RESERVED)